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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,916	04/01/2005	Yoshiro Chikaki	KKH-0037	5280

7590  
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EXAMINER

GOFF II, JOHN L

ART UNIT

PAPER NUMBER

1791

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/529,916

**Applicant(s)**

CHIKAKI ET AL.

**Examiner**

John L. Goff

**Art Unit**

1791

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 May 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

### **DETAILED ACTION**

1. This action is in response to the amendment filed on 5/13/09.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

3. Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-95089 (See also the machine translation and abstract) or Chikaki et al. (U.S. Patent 6,149,757) in view of Stuhldreher (U.S. Patent 4,943,609) or Lugmair et al. (U.S. Patent Application Publication 2002/0014546).

JP 10-95089 and Chikaki each disclose a laminating apparatus comprising an upper chamber (10 of JP10-95089 and 2 of Chikaki) and a lower chamber (12 of JP10-95089 and 3 of Chikaki) partitioned by a diaphragm (30 of JP10-95089 and 4 of Chikaki), a heater board (35 of JP10-95089 and 10 of Chikaki) provided in the lower chamber, and a holding means (36 of JP10-95089 and 13 of Chikaki). JP 10-95089 and Chikaki do not specifically teach the diaphragm constitutes a single layer of butyl rubber. However, JP 10-95089 teaches the diaphragm is a single layer of heat resistant rubber such as VITON (fluorocarbon rubber), etc. (Paragraph 0016), and Chikaki teaches the diaphragm is a single layer of a heat resistant rubber such as fluorine containing rubber (Column 4, lines 28-30). Thus, JP 10-95089 and Chikaki are not limited to any particular material for the diaphragm other than the material is a heat resistant rubber. Stuhldreher disclose a heat resistant rubber having good physical properties for use as a

curing bladder in a press which rubber comprises butyl rubber, it being noted a curing bladder is considered analogous to a diaphragm (Column 1, lines 13-29 and 36-41 and Column 3, line 26 to Column 4, line 7). Lugmair is further cited as optionally demonstrating a press including a diaphragm, i.e. elastic pressing membrane, which diaphragm is made either of butyl rubber or VITON (Paragraph 0088). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the single layer of heat resistant rubber for the diaphragm in either JP10-95089 or Chikaki the butyl rubber shown by Stuhldreher forming a diaphragm having good physical properties. Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the single layer of heat resistant rubber for the diaphragm in either JP10-95089 or Chikaki butyl rubber a known functional equivalent in forming a diaphragm to fluorine containing rubber as shown by Lugmair.

Regarding the limitations of “for laminating a solar battery panel” and “wherein the solar battery panel has a structure with strings sandwiched with a filler between a reinforcing material and a cover glass, and wherein the filler is ethylene-vinyl acetate (EVA) resin”, these limitations are directed to the material or article worked upon by the claimed apparatus. Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim (MPEP 2115). However, it is noted both JP10-95089 and Chikaki are capable of use with the material claimed, and JP10-95089 in particular describes using the apparatus on the same solar battery panel claimed.

Regarding the limitations of “said diaphragm being capable of freely expanding for pressurizing the object to be laminated which is mounted on said heater board”, “for holding the object to be laminated which is mounted on said heater board in a state that the object to be

laminated is separated upward from an upper surface of said heater board while the object to be laminated is carried in” in claim 3, and “configured to hold the object to be laminated in a state that the object to be laminated is separated upward from the upper surface of said heater board also while the object to be laminated is carried out” in claim 4, these limitations are directed to the manner of operating the claimed apparatus. A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim (MPEP 2114). The apparatus taught by both JP 10-95089 and Chikaki include all of the structural limitations of the claim which structure is capable of operating in the manner claimed including the diaphragm is capable of expanding and pressurizing an object on the heater board and the holding means is capable of holding an object separated upward from the upper surface of the heater board while the object is carried in or out.

As to the new limitation in claim 1 of “wherein the laminating apparatus is tightly closed, an inside of the upper chamber and an inside of the lower chamber are evacuated thereafter, and atmospheric pressure is introduced into the upper chamber to expand the diaphragm downward, thereby sandwiching and pressurizing the solar battery panel between an upper surface of the heater board and the diaphragm”, this limitation is also directed to the manner of operating the claimed apparatus. Both JP 10-95089 and Chikaki include all of the structural limitations of the claim which structure is capable of operating in the manner claimed including capable of tightly closing the upper and lower chambers and an opening inside the upper (31 of JP 10-95089 and 7 of Chikaki) and lower (37 of JP 10-95089 and 8 of Chikaki) chambers capable of evacuating the chambers using vacuum or pressurizing the chambers including supplying atmospheric pressure

to expand the diaphragm downward and pressure any objects between an upper surface of the heater board and the diaphragm (Paragraphs 0016 to 0018 of JP 10-95089 and Column 4, lines 35-43 of Chikaki).

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10-95089 or Chikaki and Stuhldreher or Lugmair as applied to claims 1, 3, and 4 above, and further in view of Custer et al. (U.S. Patent 3,857,775).

JP 10-95089 or Chikaki and Stuhldreher or Lugmair as applied above teach all of the limitations in claim 2 except for a specific teaching of the butyl rubber comprising magnesium oxide. Stuhldreher teaches the heat resistant diaphragm constituted of a single layer of butyl rubber comprises 100 to 0 parts by weight of halogenated butyl, 0 to 100 parts by weight of regular butyl, 5 to 100 parts by weight of carbon black, 0 to 20 parts by weight of paraffin oil, 1 to 5 parts by weight of zinc oxide, 1 to 20 parts by weight of resin vulcanizing agent, and 0 to 10 parts by weight of processing aid such as stearic acid (Example 1 of Stuhldreher). Stuhldreher is silent as to the butyl rubber including 1 to 5 parts by weight of magnesium oxide. It was known in the art that heat resistant diaphragms formed of butyl rubber comprising 100 to 0 parts by weight of halogenated butyl, 0 to 100 parts by weight of regular butyl, 5 to 100 parts by weight of carbon black, 0 to 20 parts by weight of paraffin oil, 1 to 5 parts by weight of zinc oxide, 1 to 20 parts by weight of resin vulcanizing agent, and 0 to 10 parts by weight of processing aid such as stearic acid include the zinc oxide, magnesium oxide, and stearic acid as activators used to enhance the cure as shown by Custer (Column 2, lines 29-42 and Column 8, lines 14-28 and Example 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the butyl rubber composition taught by JP 10-95089 or Chikaki

as modified by Stuhldreher 1 to 5 parts of magnesium oxide a known activator used to enhance the cure as shown by Custer. Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made use as the butyl rubber composition taught by JP 10-95089 or Chikaki as modified by Lugmair the butyl rubber composition shown by Custer for forming an improved heat-resistant diaphragm.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection.

The new limitations are fully addressed above.

Applicants argue, "In the invention of the present application, the diaphragm is constituted of a single layer of butyl rubber. Regarding this point, in the cited document JP 10-95089, although there is a description about Viton or the like, there is no description about butyl rubber that is more resistant to deterioration or the like. Further, the cited document Lugmair et al. has a description about butyl rubber, but it is not an invention related to a laminating apparatus. The cited document Stuhldreher has, similarly, a description of butyl rubber. However, it is merely described as a material for a heat resistant bladder for repairing tires or the like, and is not an invention related to a laminating apparatus.

It was not asserted that JP 10-95089 teaches the use of butyl rubber. Lugmair is cited as showing a known press including an elastic pressing membrane, i.e. diaphragm, made either of butyl rubber or VITON. The diaphragm taught by Lugmair is analogous to that taught by JP 10-95089, and Lugmair evidences that butyl rubber and VITON are functional equivalents as a

diaphragm in a press. Stuhldreher is cited as showing a heat resistant rubber having good physical properties for use as a curing bladder in a press which rubber comprises butyl rubber. The curing bladder taught by Stuhldreher is analogous to the diaphragm taught by JP 10-95089 as both are heat resistant rubber members that expand and pressurize an object in a press.

### *Conclusion*

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is (571)272-1216. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John L. Goff/  
Primary Examiner, Art Unit 1791